

REMARKS/ARGUMENTS

Claims 1-25 are pending in the present application.

35 U.S.C. § 102 Rejections

The Examiner rejected claims 1-25 under 35 U.S.C. §102(e) as being anticipated by Chen (U.S. Patent No. 5,960,170). In so doing, the Examiner stated:

As per claim 1:

Chen discloses a computer system having a processor (CPU), memory elements, and network interface that is coupled to the bus (col. 10, lines 18-37). Chen includes the processor to receive instructions from a memory (col. 9, lines 12-24) and data memory (ROM or RAM) for storing data that passes through the card from the memory elements and accessibly to the processors (col. 10, lines 37-42). Chen also includes an I/O ports for exchanging data through the option card with an external network wherein the option card cooperates with the computer system in directing the data between the I/O ports and the flow of data through the data memory to and from the memory elements in response to the execution of instructions (col. 10, lines 18-52), thus providing pattern recognition services for the flow of data (col. 9, lines 49-62 and col. 14, lines 58-67). Also, see FIGs. 3 and 4A. . . .

As per claim 10

Chen discloses plurality of computer system having a processor (CPU) and a server memory (col. 24, lines 38-40). Chen includes the network processor coupled to each of the computer systems (col. 55, lines 35-63) and joining into a server farm (see FIG. 7). Chen includes the processor to receive instructions from a memory (col. 9, lines 12-24) and data memory (ROM or RAM) for storing data that passes through the card from the memory elements and accessibly to the processors (col. 10, lines 37-42). Chen also discusses the I/O ports for exchanging data through the option card with an external network wherein the option card cooperates with the computer system in directing the data between the I/O ports and the flow of data through the data memory to and from the memory elements in response to the execution of instructions (col. 10, lines 18-52), thus providing pattern recognition services for the flow of data (col. 9, lines 49-62 and col. 14, lines 58-67). Also, see FIGs. 3 and 4A. . . .

As per claim 18

Chen discloses a plurality of computer system having a processor (CPU) a plurality of DASD devices in the form of data storage device such as hard disk (col. 10, lines 21-22). Chen includes the processor to receive instructions from a memory (col. 9, lines 12-24) and data memory (ROM or RAM) for storing data that passes through the card from the memory elements and accessibly to the processors (col. 10, lines 37-42). Chen also discusses the I/O ports for exchanging data through the option card with an external network wherein the option card cooperates with the computer system in directing the data between the I/O ports and the flow of data through the data memory to and from the memory elements in response to the execution of instructions (col. 10, lines 18-52), thus providing pattern recognition services for the flow of data (col. 9, lines 49-62 and col. 14, lines 58-67). Also, see FIGs. 3 and 4A for diagram of the CPU and the DASD devices.

Applicant respectfully disagrees.

The present invention is directed to an improved network processor for data flow pattern recognition and manipulation. The network processor includes a plurality of interface processors, internal instruction memory for storing instructions to be executed by the plurality of interface processors, internal data memory for storing data passing through the network processor and accessible by the plurality of interface processors, and a plurality of I/O ports. In one embodiment, the network processor is an option card that is coupled to a computer system via an internal bus. In another embodiment, the network processor is coupled to a plurality of computer systems to form a server farm, and in a third embodiment, the network processor is interposed between a computer system's CPU and its DASD peripheral devices. When coupled to the various components described above, the network processor provides pattern recognition services for the flow of data to and from the various components and an external network.

The present invention, as recited in claims 1, 10, and 18, provides:

1. Apparatus comprising:
a computer system having
a central processing unit,
memory elements operatively coupled to said central
processing unit, and

an option bus operatively coupled to said central processing unit and said memory elements; and
a network processor option card operatively connected to said computer system through said option bus, said option card having mounted thereon:

- a plurality of interface processors;
- instruction memory storing instructions accessibly to said interface processors;
- data memory storing data passing through said option card from said memory elements and accessibly to said interface processors; and
- a plurality of input/output ports;
 - one of said input/output ports exchanging data passing through said option card with an external network under the direction of said interface processors;

said option card cooperating with said computer system in directing the exchange of data between said data exchange input/output ports and the flow of data through said data memory to and from said memory elements in response to execution by said interface processors of instructions loaded into said instruction memory and providing pattern recognition services for the flow of data.

10. Apparatus comprising:

- a plurality of a computer systems each having
 - a central processing unit, and
 - server memory;

- a network processor coupled to each of said computer systems and joining the coupled computer systems into a server farm, said network processor having:

- a plurality of interface processors;
- instruction memory storing instructions accessibly to said interface processors;
- data memory storing data passing through said network processor to and from each of said coupled computer systems accessibly to said interface processors; and
- a plurality of input/output ports;
 - one of said input/output ports exchanging data passing through said network processor with an external network under the direction of said interface processors;
 - others of said input/output ports exchanging data passing through said network processor with said coupled computer systems;

said network processor cooperating with said coupled computer systems in directing the exchange of data between said input/output ports and the flow of data through said data memory to and from said coupled computer systems in

response to execution by said interface processors of instructions loaded into said instruction memory and providing pattern recognition services for the flow of data.

18. A computer system comprising:
 - a central processing unit;
 - a plurality of DASD peripheral devices operatively associated with said central processing unit; and
 - a network processor operatively interposed between said central processing unit and DASD peripheral devices and among said DASD peripheral devices, said network processor having:
 - a plurality of interface processors;
 - instruction memory storing instructions accessibly to said interface processors;
 - data memory storing accessibly to said interface processors data passing through said network processor from and to said DASD peripheral devices; and
 - a plurality of input/output ports exchanging data passing through said network processor with said DASD peripheral devices;

said network processor cooperating with said central processing unit in directing the exchange of data between said input/output ports and the flow of data through said data memory to and from said DASD peripheral devices in response to execution by said interface processors of instructions loaded into said instruction memory and providing pattern recognition services for the flow of data.

Unlike the present invention, Chen is directed to a remote server (400, Figure 1) that detects viruses on client systems (300, Figure 1). The virus detection server 400 provides centralized access to client systems 300 to detect and treat viruses. (Abstract).

Claim 1

Applicants respectfully submit that Chen fails to teach or suggest the cooperation of elements recited in claim 1. First, Chen fails to teach or suggest “a network process option card operatively connected to said computer system through said option bus.” Second, Chen fails to teach or suggest a network process option card that has mounted thereon “a plurality of interface processors,” and “a plurality of input/output ports,” one of which exchanges “data passing

through said option card with an external network under the direction of said interface processors.”

Based on the Examiner’s rejection, Chen’s client system 300 teaches the present invention’s “computer system,” and Chen’s virus detection server 400 teaches the “network processor option card.” Applicants respectfully submit that Chen’s server 400 is not, by definition, “a network processor *option card*.” An *option card* is commonly known in the art as a component that provides added functionality to a computer system, and that is plugged into the computer system. Please see Specification, page 9, lines 1-17, for a general discussion of the option card. Chen’s server 400 is a stand alone computer system. It is not an option card.

Moreover, Chen’s server 400 is connected to the client system 300 via a network, e.g., LAN or WAN (see Figures 1 and 7). In the present invention, as recited in claim 1, the network processor option card is “operatively connected to said computer system through said *option bus*” in the computer system. This is further evidence that Chen’s server 400 does not teach or suggest the network processor *option card* recited in claim 1.

Even if Chen’s server 400 could be construed to be the network processor option card connected to the computer system via an internal option bus in the computer system, which it does not, Applicants respectfully submit that Chen’s server 400 fails to teach or suggest “a *plurality* of interface processors” mounted thereon, as recited in claim 1. By definition, a *plurality* of components is *more than one* component. In Chen, the server 400 includes only *one* CPU 412. (see Figure 4A and Figure 8A, col. 10, lines 18-25).

In addition, Chen’s server 400 fails to teach or suggest “one of said input/output ports exchanging data passing through said option card with an external network under the direction of said interface processors,” as recited in claim 1. In Chen, the I/O ports 418 “facilitate . . . *input*

and output from the server” (col. 10, lines 30-34), and do not exchange “data passing through said option card with an external network.” Rather, in Chen, the “CPU 412 . . . provides signals for sending and receiving data *through the network interface 420* and transmission line 430 to facilitate communication with other devices such as a client 300.” (Col. 10, lines 37-42). The network interface 420 does not teach or suggest the I/O port of the present invention.

Based on the reasons articulated above, Applicants respectfully submit that Chen fails to teach or suggest the present invention as recited in claim 1. Accordingly, claim 1 is allowable over Chen. Claims 2-9 depend on claim 1, and the arguments above apply with full force to claims 2-9. Accordingly, Applicants respectfully submit that claims 2-9 are also allowable over Chen.

Claim 10

Applicants respectfully submit that Chen fails to teach or suggest the present invention as recited in claim 10. In the present invention, a network processor can be coupled to a plurality of computer systems to form a server farm. The network processor utilizes its input/output ports to manage data flow between the servers as well as data exchange with an external network and computer systems in the server farm.

Chen fails to teach or suggest a network processor that joins a plurality of computer systems “into a server farm,” as recited in claim 10. A server farm is a commonly used term that refers to group of networked servers that provide bulk computing for specific applications such as Web site hosting. (See TechEncyclopedia at www.techweb.com). In Chen, there is no mention or suggestion of a server farm. The virus detection server 400 does not join a plurality of clients “into a server farm,” as recited in claim 10.

The Examiner states that Figure 7 teaches a server farm. Applicants disagree. In Figure 7, a plurality of clients 300, a gateway server 710 and an administrative server 725 are networked via a LAN. The gateway server 710 is coupled to the virus detection server 400 via a WAN. In Figure 7, the virus detection server 400 is coupled to the gateway server 710. It is not “coupled to each of said computer systems and joining the coupled computer systems into a server farm,” as recited in claim 10.

Moreover, as stated above, Chen fails to teach or suggest a network processor that has “a plurality of interface processors,” and “a plurality of input/output ports,” one of which exchanges “data passing through said network processor with an external network under the direction of said interface processors.” Those reasons are incorporated here.

Based on the reasons articulated above, Applicants respectfully submit that Chen fails to teach or suggest the present invention as recited in claim 10. Accordingly, claim 10 is allowable over Chen. Claims 11-17 depend on claim 10, and the arguments above apply with full force to claims 11-17. Accordingly, Applicants respectfully submit that claims 11-17 are also allowable over Chen.

Claim 18

Applicants respectfully submit that Chen fails to teach or suggest the present invention as recited in claim 18. In the present invention recited in claim 18, a network processor is *interposed between* a computer system’s CPU and a plurality of DASD devices and *among* the DASD devices. The network processor includes data memory for storing data passed from and to the DASD devices and utilizes its input/output ports to manage the data passing through the network processor with the DASD devices.

Chen fails to teach or suggest a computer system that includes “a network processor operatively interposed between said central processing unit and said DASD peripheral devices and among said DASD peripheral devices,” as recited in claim 18. In Chen, the virus detection server 400, which the Examiner equates to the network processor of the present invention, is coupled to the client computer systems 300 through a WAN (Figure 1 and Figure 7). While both the client system 300 and server 400 have CPUs 312, 412 and data storage devices 316, 416, there is no teaching or suggestion of “a network processor operatively interposed between said central processing unit and said DASD peripheral devices and among said DASD peripheral devices,” as recited in claim 18.

Moreover, Chen fails to teach or suggest such a network processor that includes “a plurality of input/output ports exchanging data passing through said network processor with said DASD peripheral devices,” as recited in claim 18. In Chen, the virus detection server 400 provides virus detection services to the client systems 300 by exchanging virus detection and treatment objects with the client 300 in response to a request from the client 300. The data passing through the server 400 comes from the requesting client system 300. Nothing in Chen teaches or suggests that the server 400 (network processor) uses its I/O ports to exchange “data passing through” the server 400 (network processor) with the data storage devices 416 in the server 400, as recited in claim 18.

Based on the reasons articulated above, Applicants respectfully submit that Chen fails to teach or suggest the present invention as recited in claim 18. Accordingly, claim 18 is allowable over Chen. Claims 19-25 depend on claim 18, and the arguments above apply with full force to claims 19-25. Accordingly, Applicants respectfully submit that claims 19-25 are also allowable over Chen.

Conclusion

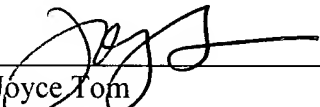
In view of the foregoing, Applicant submits that claims 1-25 are allowable over the cited reference. Applicants respectfully request reconsideration and allowance of the claims as now presented.

Applicant's attorney believes that this application is in condition for allowance. Should any unresolved issues remain, Examiner is invited to call Applicant's attorney at the telephone number indicated below.

Respectfully submitted,
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Date



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